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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/571,404	03/10/2006	Luigi Resconi	FE 6129 (US)	6658

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EXAMINER

BOYLE, ROBERT C

ART UNIT	PAPER NUMBER
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4131

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/571,404	Applicant(s) RESONI ET AL.	
	Examiner ROBERT C. BOYLE	Art Unit 4131	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18-35 is/are rejected.
- 7) ☒ Claim(s) 18,20,31,33 and 35 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/11/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Double Patenting***

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 18-21, 23, 24, 26, 27, and 31-34 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 39-51 of copending Application No. 10/571,382. Although the conflicting claims are not identical, they are not patentably distinct from each other.

3. Claims in the copending patent recite a multi-stage process of polymerizing first propylene and then ethylene in the presence of an organic polymer support catalyst system. Claims 48-51 are substantially the same as instant claims 31-34.

4. The difference lies in that the instant claims are silent with respect to hydrogen use and the copending application recites carrying out the process in the presence of hydrogen. The use of "comprising" of the instant claims allows for the additional ingredient, hydrogen. Thus, it

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would have been obvious to one of ordinary skill in the art at the time of the invention to utilize hydrogen to regulate molecular weight in polymerization. Moreover, the choice of a particular amount of hydrogen, relative to ethylene, is a matter of routine experimentation and would have been well within the skill level of, and thus obvious to, one of ordinary skill in the art.

5. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

6. Claims 18-21, 23, 24, 27, and 31-34 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 41-45, 47, 48, and 52-55 of copending Application No. 10/571,389. Although the conflicting claims are not identical, they are not patentably distinct from each other because both sets of claims are drawn to substantially the same process. Claims of the copending application recite a multi-stage process of polymerizing propylene then ethylene in the presence of an organic polymer supported catalyst system. The copending application specifies the R groups attached to the phenyl ring on the metallocene as being C(R₁₂)₃. The instant application recites the R groups off the phenyl ring can be branched alkyl groups, which includes and thus anticipates C(R₁₂)₃. Additionally, the instant application uses an organic polymer as a support, whereas the copending application only recites an inert carrier. However, an inert carrier encompasses, and thus anticipates, the species of organic polymers. Furthermore, one of ordinary skill of the art at the time of the invention would have recognized that organic polymer supports are inert carriers for catalytic systems.

7. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

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8. Claims 18-21, 23-27, 31-34 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 23-37 and 41-44 of copending Application No. 10/571,403. Although the conflicting claims are not identical, they are not patentably distinct from each other because both sets of claims are drawn to substantially the same process. Claims of the copending application recite a multi-stage process of polymerizing propylene then ethylene in the presence of a supported catalyst system. The instant application uses an organic polymer as a support, whereas the copending application only recites an inert carrier. However, an inert carrier encompasses, and thus anticipates, the species of organic polymers. Furthermore, one of ordinary skill of the art at the time of the invention would have recognized that organic polymer supports are inert carriers for catalytic systems.

9. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Objections

1. Claims 18, 20, 31, 33, and 35 are objected to because of the following informalities: the term “propylene resin” is used instead of “polypropylene” or “polypropylene resin”.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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2. Claims 18-27, 31-35 are rejected under 35 U.S.C. 102(b) as being anticipated by Schottek et al., WIPO Publication WO 01/48034. For the purpose of translation, the U.S. national stage entry, U.S. 2003/0149199, will be cited to.
3. Claim 18 discloses a multistage process comprising the steps of (1) polymerizing propylene to form a polypropylene resin with a polymer supported catalyst system of the described metallocene and an alumoxane and (2) polymerizing ethylene in the gas phase with one or more alpha olefins in the presence of the polypropylene resin.
4. Schottek teaches a process for the polymerization of olefins, including propylene and ethylene in a gas phase in a multistage process with organically supported catalytic systems of metallocenes and alumoxanes (abstract; paragraphs 0110-0117, 0139, 0178, 0203, 0205, 0121). Schottek teaches the limitations of the metallocene disclosed in claim 1 (paragraphs 0110-0121).
5. Claims 19 and 20 disclose the presence of an organo aluminum compound. Schottek teaches this limitation (paragraphs 0152-0153).
6. Claims 21-23 disclose structural details of the metallocene. Schottek teaches these limitations (paragraphs 0110-0121).
7. Claim 24 discloses the indene derivative is specifically used. Schottek teaches this limitation (paragraphs 0110-0121).
8. Claim 25 discloses asymmetric indenyl substitutions of a hydrogen and a alkyl radical. Schottek teaches this limitation (paragraphs 0110-0121).
9. Claim 26 discloses the bridged metallocene has both indene derivative, formula IIIb, and the fused cyclopentadiene-cyclothiopentadiene derivative, forumula IIIa. Schottek teaches this limitation (paragraphs 0110-0121).

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10. Claim 27 discloses hydrogen substituted on the six membered ring of the indenyl.

Schottek teaches this limitation (paragraphs 0110-0121).

11. Claim 31 discloses the polypropylene resin has 5-90 wt% propylene copolymer and from 5-95 wt% ethylene copolymer that has 5-90 mol% alpha alkyl olefin. Schottek discloses propylene copolymers of 50-100 wt% propylene and a propylene-ethylene copolymer which has an ethylene content of 15-80 wt% which may have other alpha olefins (paragraphs 0211-0212).

12. Claim 32 disclose the ethylene copolymer has up to 20 mol% of a non-conjugated diene. Schottek teaches using non-conjugated dienes (paragraph 0203) in copolymerization of ethylene (paragraph 0212).

13. Claim 33 discloses the polypropylene resin is a homopolymer of propylene. Schottek teaches this limitation (paragraph 0211).

14. Claim 34 discloses the alpha olefins are selected from propylene and butane. Schottek teaches this limitation (paragraph 0212).

15. Claim 35 discloses a propylene polymer composition of (a) 5-90 wt% propylene homopolymer with isotactic pentads higher than 90%, (b) from 10 to 95 wt% ethylene copolymer. The polymer composition has a flowability index equal to or greater than 2 and the composition is produced according to claim 1. Schottek teaches a propylene copolymer of 50-100 wt% propylene and ethylene content from 15-80 wt% (paragraphs 0211-0212) and made according to the method of claim 1 (abstract; paragraphs 0110-0117, 0139, 0178, 0203, 0205, 0110-0121).

16. Claim 35 states properties of the polypropylene composition: isotactic pentads higher than 90% and a flowability index equal to or greater than 2. Schottek does not elaborate on the

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properties recited in claim 35. However, since the same polypropylene composition that is disclosed in claim 35 is taught in Schottek, one would expect that the polypropylene composition of Schottek would have the same properties as the polypropylene composition disclosed in claim 35.

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. Claims 28 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schottek in view of Spitz et al., U.S. Patent 6,057,258.

19. Claim 28 discloses the porous polymer support has pore diameter up to 10 micrometers and a porosity higher than 0.1 cc/g. Schottek does not teach the pore diameter of the polymer support. Spitz teaches organic supports with pore diameters of 75-300 Angstroms and a porosity from 1 to 4 cc/g (column 2, lines 15-24).

20. One of ordinary skill in the art at the time the invention was made would have been motivated to modify the polymerization process in Schottek with the pore sizes and porosity taught in Spitz because Spitz teaches polymerization of propylene and ethylene with metallocene/aluminoxane with a support that gives high activity and leads to polymers with high molecular mass and low polydispersity (column 1, lines 10-27, 38-47; column 2, lines 15-24; column 8, lines 14-25). Therefore, the invention as a whole would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made.

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21. Claim 29 discloses the pore diameter is between 0.02 and 10 micrometers. Spitz teaches polymer supports with pore diameters of 75-300 Angstroms(column 2, lines 15-24).

22. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schottek and Spitz in view of Costa et al., U.S. Patent Application Publication 2001/0014727.

23. Claim 30 discloses at least 30% of the total porosity is comprised of pores having a diameter between 0.1 and 2 micrometers. Schottek does not teach pores with a diameter between 0.1 micrometers (1,000 Angstroms) and 2 micrometers (20,000 Angstroms). Costa teaches a pore radius between 1,000 and 75,000 Angstroms (abstract; paragraph 0012). The range taught by Costa overlaps with the range disclosed in claim 30 and it has been held that overlapping ranges are sufficient to establish *prima facie* obviousness. See MPEP 2144.05.

24. One of ordinary skill in the art at the time the invention was made would have been motivated to modify the polymerization process in Schottek with the pore sizes taught in Costa because Costa teaches catalyst support systems for the polymerization of alpha olefins with titanium catalysts where the supports are able to have variable sized particles which allows for obtaining polymers with low inorganic compound content (Costa: abstract; paragraphs 0011, 0015, 0085). Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT C. BOYLE whose telephone number is (571)270-7347. The examiner can normally be reached on Monday-Friday 9:00am - 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Sample can be reached on (571)272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David R. Sample/
Supervisory Patent Examiner
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